Salving the S. S. Penn
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Salving the S. S. Penn

The fast day passenger steamship *Penn,* of the Ericsson Line of Philadelphia, burned and sank at her wharf, Pier 4, South Philadelphia, on Sept. 6, and, on account of the light construction of the vessel, the peculiar position in which she lay, and the character of the bottom, the salvage operations were difficult.

The *Penn* and her sister ship, the *Lord Baltimore,* were built by the Harlan & Hollingsworth Corporation, Wilmington, Del., in 1903, for their present owners, for service during the summer months between Philadelphia and Baltimore via the Delaware and Chesapeake Canal. On account of the small width of the canal locks the beam of the vessels was limited.

Their registered dimensions are 196 feet by 23 feet 6 inches by 12 feet. The propelling machinery consists of a 4-cylinder triple-expansion surface-condensing engine, with cylinders 21, 32, 35 and 35 inches diameter by 24 inches stroke, to which steam is supplied at 200 pounds working pressure by four Almy watertube boilers, which are arranged in pairs with a cross-bunker between them.

Fire broke out in the galley of the vessel about 5 o'clock in the morning of Sept. 6, and efforts made to operate the vessel's fire pump had to be abandoned on account of the heat. The flames were finally subdued, however, by two city fireboats, but in accomplishing this sufficient water was poured into the vessel to cause her to sink. Some idea of the difficulties encountered in salving the vessel may be gathered from the fact that 49 days elapsed from the time the work was begun until she was again afloat, although the wrecking company to whom was awarded the contract to raise the vessel agreed to do the work in 12 days.

Salvage operations began Sept. 12, when the wreck was examined by a diver. It was decided to raise the vessel by closing all openings in the main deck except in way of the machinery space, building a cofferdam around the machinery space from the main deck to above the surface of the water, and then pumping out the water within this cofferdam and below the main deck.

The shade deck was cut away amidships for the cofferdam, and it was also cut away forward of the pilot house for the installation of a pump on the bow. Two duplex pumps were installed in the engine-room near the after end of the cofferdam with discharges over the starboard side, and two centrifugal pumps were installed in the cofferdam forward of the after boiler with long suctions.

The first effort to raise the *Penn* was made on Oct. 17, when the centrifugal and duplex pumps were placed in operation, and a constant pull was maintained on a sling placed around the vessel aft and carried to a wrecking steamer alongside. About 1¼ hours after low tide, however, the water started to come in over the aft port corner of the cofferdam and work had to be stopped. After making various improvements and raising the lower corner of the cofferdam about a foot, another attempt to raise the vessel was made on Oct. 19, but proved unsuccessful.

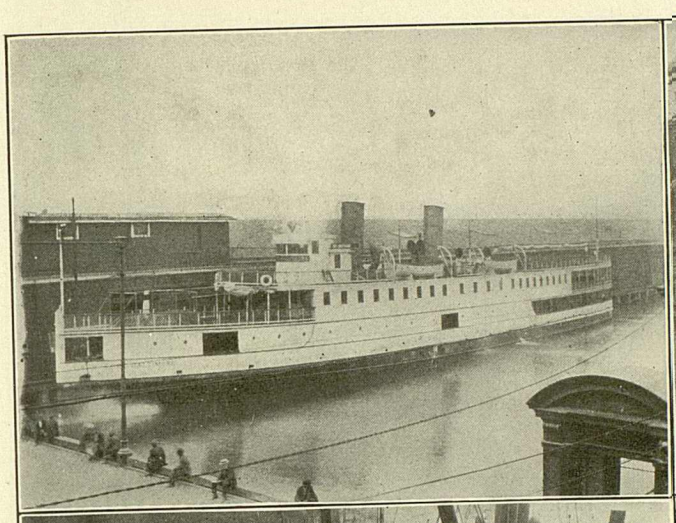

Fig. 1.—The S. S. *Penn*

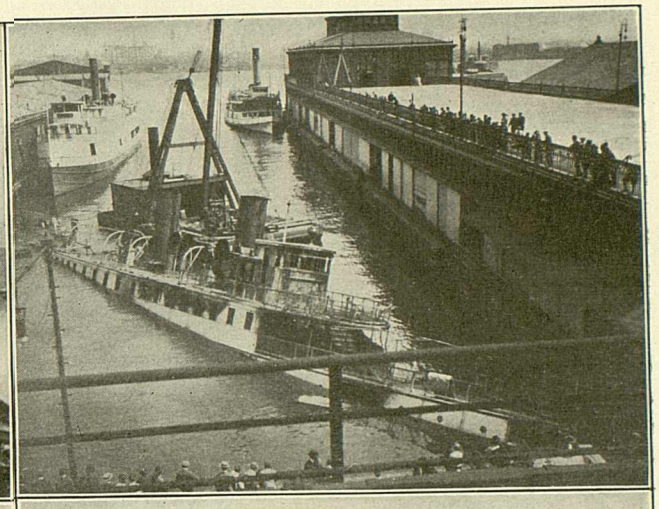

Fig. 2.—Position of the Vessel after Sinking

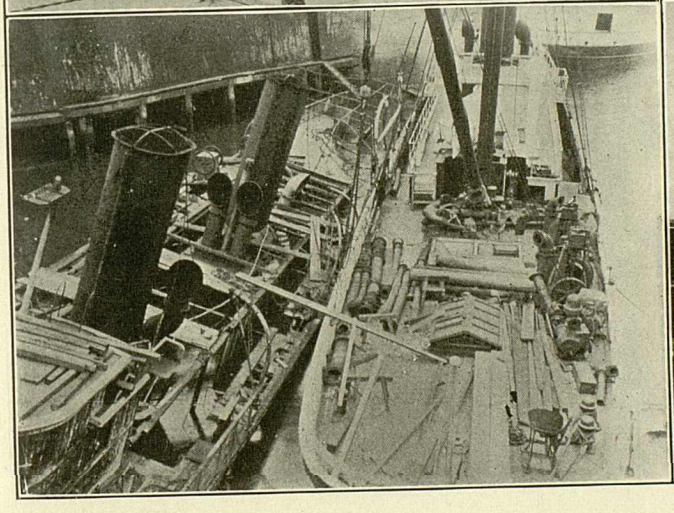

Fig. 3.—Salvage Operations

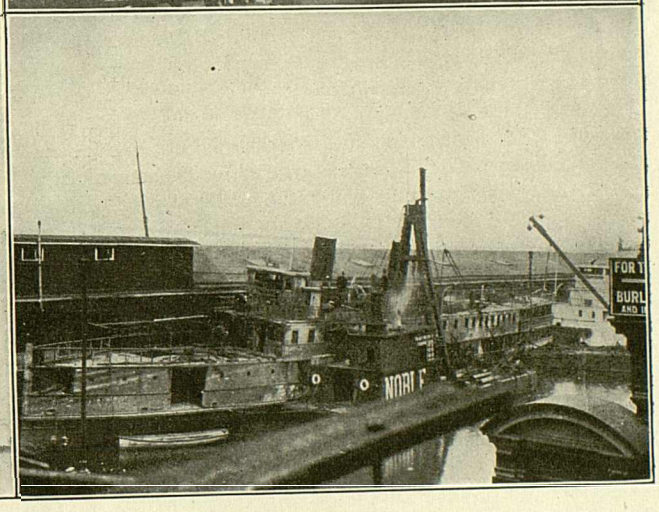

Fig. 4.—The *Penn* Again Afloa

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A third unsuccessful attempt was made on Oct. 20, and a fourth effort was made on Oct. 24, all five of the pumps being operated and with the wrecking steamer exerting a pull at the stern directly on the port side. As the result of this attempt the bow came up several feet, but the stern remained fast, so on the next day an additional centrifugal pump was installed forward of the others in the cofferdam, and on Oct. 26 the fifth attempt was made, with all six pumps operating, and with the wrecking steamer and a wrecking lighter exerting an upward pull aft.

A sixth attempt to raise the vessel failed on Oct. 27, and another centrifugal pump was placed in the aft port corner of the cofferdam. With all pumps working and the two lighters pulling up on the port side a seventh attempt was made on Oct. 30, with the result that for the first time the stern was raised, but when it left the bottom the vessel started to turn over to port, notwithstanding the upward pull on that side, and the attempt had to be abandoned.

The eighth and successful attempt to raise the vessel was made on Oct. 31. The conditions were the same as on the previous day, except that the bow was not allowed to come up so high. Fig. 4 shows the vessel after she was again afloat.

Phiiadelphia, Pa.

SURVEYOR.

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